

WHAT IS CLAIMED IS:

1. An electronic device comprising: a source signal line driver circuit; a gate signal line driver circuit; a reset signal line driver circuit; and a pixel portion;

wherein:

the pixel portion has: a plurality of source signal lines; a plurality of gate signal lines; a plurality of electric current supply lines; a plurality of reset lines; and a plurality of pixels;

each of the plurality of pixels has: a switching transistor; an EL driver transistor; a reset transistor; a storage capacitor, and an EL element;

a gate electrode of the switching transistor is electrically connected to one of the plurality of gate signal lines;

one of a source region and a drain region of the switching transistor is electrically connected to the source signal line, and the remaining one of the source region and the drain region is electrically connected to a gate electrode of the EL driver transistor;

a gate electrode of the reset transistor is electrically connected to the reset signal line;

one of a source region and a drain region of the reset transistor is electrically connected to one of the plurality of gate signal lines, and the remaining one of the source region and the drain region is electrically connected to a gate electrode of the EL driver transistor;

one electrode of the storage capacitor is electrically connected to the electric current supply line, and the remaining electrode is electrically connected to the gate electrode of the EL driver transistor; and

one of a source region and a drain region of the EL driver transistor is

electrically connected to the electric current supply line, and the remaining one of the source region and the drain region is electrically connected to one electrode of the EL element.

2. An electronic device according to claim 1, wherein:

a p-channel polarity transistor is used for the switching transistor when the source region or the drain region of the EL driver transistor is electrically connected to an anode of the EL element; and

an n-channel polarity transistor is used for the switching transistor when the source region or the drain region of the EL driver transistor is electrically connected to a cathode of the EL element.

3. A method of driving an electronic device, wherein:

one frame period has n subframe periods SF_1, SF_2, \dots, SF_n ;

the n subframe periods each have address (write in) periods Ta_1, Ta_2, \dots, Ta_n , and sustain (turn on) periods Ts_1, Ts_2, \dots, Ts_n ;

the address (write in) period and the sustain (turn on) period overlap in at least one subframe period among the n subframe periods; and

when the address (write in) period Ta_m (where $1 \leq m \leq n$) of the subframe period SF_m , and the address (write in) period Ta_{m+1} of the subframe period SF_{m+1} overlap, a non-display period exists in a period from the completion of the sustain (turn on) period SF_m of the subframe period SF_m , until the start of the address (write in) period Ta_{m+1} .

4. A method of driving an electronic device, wherein:

one frame period has n subframe periods SF_1, SF_2, \dots, SF_n ;

the n subframe periods each have address (write in) periods Ta_1, Ta_2, \dots, Ta_n , and sustain (turn on) periods Ts_1, Ts_2, \dots, Ts_n ;

the address (write in) period and the sustain (turn on) period overlap in at least one subframe period among the n subframe periods; and

when the address (write in) period Ta_n of the subframe period SF_n of the number j frame (where $0 < j$), and the address (write in) period Ta_1 of the subframe period SF_1 of the number $j + 1$ frame overlap, a non-display period exists in a period from the completion of the sustain (turn on) period Ts_n of the subframe period SF_n of the number j frame, until the start of the address (write in) period Ta_1 of the subframe period SF_1 of the number $j + 1$ frame.

5. A method of driving an electronic device, wherein:

one frame period has n subframe periods SF_1, SF_2, \dots, SF_n ;

the n subframe periods each have address (write in) periods Ta_1, Ta_2, \dots, Ta_n , and sustain (turn on) periods Ts_1, Ts_2, \dots, Ts_n ; and

if $ta_k > ts_k + tg$ is satisfied in a certain subframe period SF_k ($1 \leq k \leq n$), where the length of the address (write in) period is taken as ta_k , the length of the sustain (turn on) period is taken as ts_k , and the length of one gate signal line selection period is taken as tg , and $ta_k, ts_k, tg > 0$, and if the length of a non-display period of SF_k is taken as tr_k (where $tr_k > 0$):

$tr_k \geq ta_k - (ts_k + tg)$ is always satisfied.

6. A method of driving an electronic device according to claim 3, wherein:

the EL driver transistor is placed in a non-conductive state in the non-display period by the reset transistor being conductive due to a signal input from a reset signal line driver circuit; and

during a period after the reset transistor returns to a non-conducting state, until write in of the next signal from the source signal line is preformed, the gate voltage of the EL driver transistor is maintained by the storage capacitor.

7. A method of driving an electronic device according to claim 4, wherein:

the EL driver transistor is placed in a non-conductive state in the non-display period by the reset transistor being conductive due to a signal input from a reset signal line driver circuit; and

during a period after the reset transistor returns to a non-conducting state, until write in of the next signal from the source signal line is preformed, the gate voltage of the EL driver transistor is maintained by the storage capacitor.

8. A method of driving an electronic device according to claim 5, wherein:

the EL driver transistor is placed in a non-conductive state in the non-display period by the reset transistor being conductive due to a signal input from a reset signal line driver circuit; and

during a period after the reset transistor returns to a non-conducting state, until write in of the next signal from the source signal line is preformed, the gate voltage of the EL driver transistor is maintained by the storage capacitor.

9. A method of driving an electronic device according to claim 3, wherein the EL element is turned off during the non-display period, irrespective of an image signal.

10. A method of driving an electronic device according to claim 4, wherein the EL

element is turned off during the non-display period, irrespective of an image signal.

11. A method of driving an electronic device according to claim 5, wherein the EL element is turned off during the non-display period, irrespective of an image signal.

12. A method of driving an electronic device according to claim 3, wherein the gate voltage of the EL driver transistor in the non-display period is determined by the difference between the electric potential of the electric current supply line and the electric potential of a certain gate signal line in a non-selected state.

13. A method of driving an electronic device according to claim 4, wherein the gate voltage of the EL driver transistor in the non-display period is determined by the difference between the electric potential of the electric current supply line and the electric potential of a certain gate signal line in a non-selected state.

14. A method of driving an electronic device according to claim 5, wherein the gate voltage of the EL driver transistor in the non-display period is determined by the difference between the electric potential of the electric current supply line and the electric potential of a certain gate signal line in a non-selected state.

15. A method of driving an electronic device according to claim 3, wherein an electric potential lower than the threshold voltage of the EL driver transistor, with respect to the electric potential of the electric current supply line, is inputted to the gate signal line in a non-selected state for a case in which the EL driver transistor has n-channel polarity.

16. A method of driving an electronic device according to claim 4, wherein an electric potential lower than the threshold voltage of the EL driver transistor, with respect to the electric potential of the electric current supply line, is inputted to the gate signal line in a non-selected state for a case in which the EL driver transistor has n-channel polarity.

17. A method of driving an electronic device according to claim 5, wherein an electric potential lower than the threshold voltage of the EL driver transistor, with respect to the electric potential of the electric current supply line, is inputted to the gate signal line in a non-selected state for a case in which the EL driver transistor has n-channel polarity.

18. A method of driving an electronic device according to claim 3, wherein an electric potential higher than the threshold voltage of the EL driver transistor, with respect to the electric potential of the electric current supply line, is inputted to the gate signal line in a non-selected state for a case in which the EL driver transistor has p-channel polarity.

19. A method of driving an electronic device according to claim 4, wherein an electric potential higher than the threshold voltage of the EL driver transistor, with respect to the electric potential of the electric current supply line, is inputted to the gate signal line in a non-selected state for a case in which the EL driver transistor has p-channel polarity.

20. A method of driving an electronic device according to claim 5, wherein an electric potential higher than the threshold voltage of the EL driver transistor, with respect to the electric potential of the electric current supply line, is inputted to the gate signal line in a non-selected state for a case in which the EL driver transistor has p-channel polarity.

21. An electronic device according to claim 1, wherein said electronic device is a device selected from the group consisting of: an EL display, a video camera, a head mounted display, a DVD player, a personal computer, a portable telephone and a car audio system.

22. A method of driving an electronic device according to claim 3, wherein said electronic device is a device selected from the group consisting of: an EL display, a video camera, a head-mounted, a DVD player, a personal computer, a portable telephone and a car audio system.

23. A method of driving an electronic device according to claim 4, wherein said electronic device is a device selected from the group consisting of: an EL display, a video camera, a head-mounted, a DVD player, a personal computer, a portable telephone and a car audio system.

24. A method of driving an electronic device according to claim 5, wherein said electronic device is a device selected from the group consisting of: an EL display, a video camera, a head-mounted, a DVD player, a personal computer, a portable telephone and a car audio system.